1: Burrows--21 (1947-48) Woleaians
116, 136, 262 Ifalik 1-1

"Sea animals are far more important to the people than those of air or land. Nearly all varieties that are caught are eaten. Even the whale (ras), though never caught, is eaten on the rare and memorable occasions when one goes aground on the reef. Jaw-bones of several of them were kept behind the men's house as trophies.

Exceptions to the rule of eating everything are the shark (pagō) and octopus (sauevang? --name discussed next paragraph). This was explained as a mutual arrangement. The people do not eat shark and octopus, so that shark and octopus will not eat them. Once a small octopus-like creature, stuffed into a Japanese mess-kit so that its shape did not show, was brought to us as a gift. It had tentacles, and I now suppose it was a squid; but in asking Tom how to cook it I called it an octopus. With a contemptuous expression he told us to throw it away, saying that Japanese and Trukese eat octopus, but not the people of Ifalik. Later, after conferring with the chief who brought it, he said it was not an octopus but a gus, a rare delicacy. It was too late then for our gus to be cooked. I had not even looked at it carefully. Asked whether gus is the name for a small octopus, Tom said not. A gus, he explained, has no beak, and will not bite a hand thrust into a hole in the coral, as an octopus will. We never saw another gus.

Tom consistently gave the native name for octopus as sauevang. Some of his remarks about it, --for example, 'in the deep water they grow big, with arms like the roots of that tree'--indicated that he knew what the English word meant. Yet a group of natives

once identified as sauevang two pictures in Hosaka's 'Sport Fishing in Hawaii'; one of a conger or white eel, the other of a brown eel. They cannot have mistaken either for octopus, though they might for moray--not illustrated by Hosaka--which is common on the reef. This discrepancy was not noticed in time to clear it up.

Moray and sting-ray (fai) are apparently not eaten, though I have no verbal statement to that effect. A sting-ray brought ashore near our quarters was left hanging in a tree, then lying on the ground, for several days before it disappeared, presumably either eaten by dogs or thrown away.

In Tom's private prayer or incantation for success as a navigator, sting-ray is coupled with shark and giant clam as formidable creatures invoked to watch over him. In translating, he said that the giant clam, called trewai in the incantation, is found only on high islands. We saw no very large Tridacna, but small ones are common on the reefs. They seem not to be important as food. Large trumpet shells are found occasionally, the flesh eaten, and the shell used as a container or kept on the house platform as an ornament. Small shellfish of many kinds are gathered for food on the reef when the surf is not too high; among them sea-shails, limpets, Turbo, and at least one clam-like bivalve."

1: Burrows--21-22 (1947-48) Woleaians
116, 136, 262 Ifalik

"Far the most important source of animal food is fish. The list of varieties to follow was obtained by two procedures. One was to collect native names of fish brought to us as gifts, or brought ashore in our presence, and of others said to be important. The other was to show groups of natives the pictures of fish in Hosaka's book, mentioned above. Size and color, not shown in the pictures, were indicated by gestures and words. The people were confident that they knew which of the fish shown in the pictures were familiar to them and which were not. They had names for most of those illustrated, -- sometimes more than one name for one picture, which may indicate [22] a difference of opinion, or more than one variety of similar form, or--what is not uncommon--one name for a species when young, another when full grown. Eliminating known cases of that kind and obvious variants of essentially the same name, the total number of names collected is 74. Names obtained in the two ways were compared. Twice the book was taken out to where a pile of fish lay waiting to be distributed. So far as the catch on those days allowed, the pictures were compared with actual specimens. The identifications that follow can probably be trusted as far as larger categories are concerned. Where a single species is widespread, even the specific identification is probably correct. In view of the rough and ready method, some mistakes must be expected. But at least the list will give an idea of the range and character of the fish taken for food."

1: Burrows--22-25 (1947-48) Woleaians
116, 136, 262 Ifalik I·II

"Classification by habitat seemed useful, but is bound to involve some overlapping, possibly some definite errors.

OPEN SEA OR SURF FISH

English or Hawaiian Name	Ifalik Name	Scientific Name
albacore	aúle	Germo alalunga (Gmelin
barracuda	serau	Sphyraena barracuda (Walbaum
blue crevally	langu (when small, saritr)	Caranx stellatus
bonito, skipjack	galangap, garangap, garȳng	Euthynnus pelamis
bonito, little tunny	ajInnéu	Euthynnus alletteratus (Rafinesque

English or Hawaiian Name	Ifalik Name	Scientific Name
dolphin, mahimahi	teparo	Coryphaena hippurus (Linn.
flying fish ˇ	mĕngōr	Cypselurus simus
horse mackerel, akule‣	agumau?*, sep*	Selar crumenophthalmus (Bloch
omaku	trep	Caranx mate [23]
sailfish	marelatīo	Istiophorus orientalis (Schlegel
uoua	iau	Neomyxus chapitali (Eydoux and Souleyet

"* Native reports inconsistent.

‣ To me, a fish they called lipau looked very like what in Hawaii is called akule; but the chief Maroligar insisted it was not the same as the picture."

English or Hawaiian Name	Ifalik Name	Scientific Name
wahoo, ono	ngeli	Acanthocybium (Cuvier
yellowfin tuna, ahi	tangēr, tangIri, (when small, tagū	Neothunnus macropterus (Schlegel
	LAGOON FISH	
flounder	lipēri	Platophrys mancus (Broussonet
milkfish	autā*	Chanos chanos
mullet	geraf, autā*	Mugil cephalos
needlefish	ewo,kang, ta'aku	Belone playura

"* Native reports inconsistent."

English or Hawaiian Name	Ifalik Name	Scientific Name
red squirrelfish	mol	Myripristis murdjan (Forstal
shiner (? silvery, with rosy blotches)	oerIk	(Anchoviella purpurea?)
threadfish, moi	rerepago*, 'absent'*	Polydactylus Sexfilis
	REEF FISH	
alaihi	gutr or kotr	Holocentrus diadema
balloon fish	taūsh	Chilomysturus affinis
balloon fish	lotr; when small, wat	Tetrodon hispidus (Linnaeus

"* Native reports inconsistent."

English or Hawaiian Name	Ifalik Name	Scientific Name
banded damselfish	maze	Abudefduf (Quoy and Gaimard [24]
goatfish	'many kinds': fauligi, semarubwong, seuiarang (yellow), shou, sounalo, perhaps others.	Pseudupeneus
hawkfish, black-sided	galietr*, mwelialo*	Paracirrhites forsteri (Schneider
hawkfish, white-lined	lemware	Paracirrhites arcatus (Cuvier

"* Native reports inconsistent."

English or Hawaiian Name	Ifalik Name	Scientific Name
Linalea, kala	ig valevale	Naso unicornis (Forskal
maiko	gemaruaga	Hepatus lineolatus
manini	limēn	Hepatus triostegus (Linnaeus
manini, yellow	llgarigari	Chaetodon unimaculatus (Bloch
mu	tralautr	Monotaxis grandoculis (Forskal
nenue	rel	Kyphosus fuscus (Lacepede

"# The rel of Ifalik is probably not fuscus; at least it has no brown or tawny tinge, but looks in different lights, black, gray, or gleaming silver. The scales are silver-white, outlined with black."

English or Hawaiian Name	Ifalik Name	Scientific Name
scorpion fish, nohu	lōuʾ	Scorpaenopsis gibbosus (Schneider
opule	gago (luku	Anampses cuvier (Quoy and Gaimard
pao'o	limwale	Salarius zebra (Vaillant and Sauvage
papio	arong*, trep*	not given by Hosaka

"* Native reports inconsistent.
ʳ Asked if they eat this fish, which is sometimes poisonous, natives said they do."

English or Hawaiian Name	Ifalik Name	Scientific Name
parrot fish	'Many kinds': are (red), are kulong (black-spotted), fagilimat, gauagaua gIrigIri, kabwu, moguaimwe, ngItra uiɜ (blue), perhaps others [25]	Callyodon sp.
po'opa'a	lululau	Cirrhitus pinnulatus (Schneider
long-fin razorfish	petoura	Iniistius pave (Valenciennes
redfish, big-eye	nipau	Priacanthus cruentatus (Lacepede
red squirrelfish	mol	Myripristus murdjan (Forskal

English or Hawaiian Name	Ifalik Name	Scientific Name
sandfish; a'awa	vatre	Lepidaplois bilunulatis (Lacepede
snapper	taiau	Aprion virescens (Valenciennes
spot pom	shonno	Abudefduf sordidus (Forskal
surgeon fish	evali	Hepatus bariene (Lesson
triggerfish	bwūp	Balistapus rectangulus (Schneider
triggerfish, black	perematr	Melichthys buniva (Lacepede
ulua, black	arong	Caranx sexfasciatus (Quoy and Gaimard
ulua, white	etām	Carangoides ajax (Snyder

English or Hawaiian Name	Ifalik Name	Scientific Name
ulua, silver	(when small) silalīo	Blepharis ciliaris (Bloch
upapalu	ligotro	Amia frenata (Valenciennes
wake pueo	merāp	Upeneus arge (Jordon and Evermann
wake ula	wōmei	Mulloidicthys auriflamma (Forskal
wrasse(?)[r]	pezap	not given by Hosaka
wrasse, green; hinalea	iōiō*	Thalassoma umbrostygma (Ruppell

[r] long, nearly tubular snout; about 10" long; rosy head, after parts darker.
* Native reports inconsistent."

1: Burrows--22-25
116, 136, 262

(1947-48)

Woleaians-11
Ifalik

English or Hawaiian Name	Ifalik Name	Scientific Name
kihikihi	iwājōla	not given by Hosaka"

1: Burrows--26 (1947-48) Woleaians
116, 136, 262 Ifalik

"Most prized of all animal foods is the meat of the sea turtle. Though the sight of one or two of them in the lagoon is not uncommon, they are not often taken. We knew of four being caught during our six months on Ifalik; three of them at one time. They are made still scarcer for most of the people by the fact that the highest chief has a right to all of them. He distributes first to his clan, Kovalū. Others get only what surplus he cares to distribute to them. For the lower orders, the taste of turtle is a rare delight."

1: Burrows--26 (1947-48) Woleaians
116, 262, 221 Ifalik

"On the whole, raw materials to be found on Ifalik and nearby atolls, whether supplied by nature or introduced by man, add up to a decidedly meager offering. Among foodstuffs, only coconuts, taro--more exactly, pulax--and breadfruit are plentiful. (Breadfruit is a seasonal crop but, as will be shown, is available between bearing seasons in preserved form. Seafood is present in great variety. The quantity available varies with the seasons and with other factors.

Some of these, such as the movements of fish that travel in schools, are so uncontrollable and unpredictable that they can only be classified as 'fishermen's luck.' Others include fishing equipment and techniques. Because of their importance, this matter will be considered again at the close of the account of fishing technology."

1: Burrows--29 (1947-48) Woleaians
116, 252, 262 Ifalik

"To prepare for cooking with other vegetables, the flesh of the ripe nut is grated with a different instrument, the large grater in general use throughout the tropical Pacific. It consists of a toothed edge, curved to fit the inside of a coconut, and attached to a stick. The stick may be laid across a log, or may be cut from a bough or sapling near where two branches fork off. The butt of a main piece and short lengths of the branches form a tripod. The grating edge, lashed to the projecting end of the main piece, may be of coconut shell or even rough coral; but nowadays virtually every household has a grater with a cutting edge filed out of a piece of steel. The grater is straddled and a half coconut, held in both hands, rubbed over it by pushing away from the body. The grated meat is put in a bowl, water poured over it, and the creamyjuice squeezed out with the hands. Wringers of coconut husk fiber, which make a richer cream, but take more muscle, are not used in Ifalik.

The starchy vegetables which make up the bulk of the diet are commonly cooked in this coconut cream. Rarely is a meal served without either taro or breadfruit enriched with it. Coconut cream supplies most of the oil in the diet, though supplemented by oil from fish.

It would be a sad day in an Ifalik household if the morning and evening meals lacked one more coconut product, --the fresh toddy (garī) extracted from the flower stalks. Collecting toddy, morning and afternoon, is a daily task for the younger men. Climbing coconut trees is not expected of older ones."

1: Burrows--35 (1947-48) Woleaians
116, 262, 245 Ifalik

"Breadfruit is the principal starchy food, when it is bearing. Its wood is also the most in demand for timber. In season, breadfruit makes up more of the bulk of the diet than anything else. Its main season is the rag, the time of prevailing westerly winds, approximately June to November. The crop reaches it height about July, then dwindles until by November there is very little. A second but smaller crop comes in the trade-wind season. During our stay, breadfruit seemed to be coming in again in January. Mai vae made up most or all of it. We were told that it would have come earlier but for two near-hurricanes, one in November and the other late in December, that destroyed much of the young fruit."

1: Burrows--36 (1947-48) Woleaians
116, 241, 262, 462 Ifalik

"Taro is the staple starchy food of the trade-wind season, as breadfruit is of the season of westerly winds. This is not because more taro is available at one time than another--it can be harvested at any time--but because it is used most when breadfruit is scarce.

The limiting factor to the supply of taro on Ifalik is labor. The big swamp on Falālap has been planted to taro from time immemorial. More grows there now than can be eaten or taken care of, --especially since the laborious work of weeding and fertilizing it is left entirely to women."

1: Burrows--37 (1947-48) Woleaians
116, 167, 262 Ifalik

"During the war many Woleai people came to Ifalik because the Japanese were using Woleai for an airfield, which not only crowded the natives but subjected them to American bombing. Our interpreter put the number who came to Ifalik at 375. Even if we discount liberally--for his figures could never be trusted--it seems likely that the population of Ifalik was at least doubled then, rather suddenly. Tom assured us that there was plenty of taro for all, and plenty left over; and on information of that kind he was generally dependable."

(Terminalia catappa?) are enjoyed by small boys enough to induce them to crush the thick, fibrous hulls.

Young leaves from the tips of the branches of a full-sized tree, the aroma (Pipturus argenteus) are said to make edible greens if boiled, mashed, and mixed with toddy and coconut cream."

1: Burrows -39 (1947-48) Woleaians
116, 262, 241, 824 Ifalik

"Though bananas (wir) bear well, and the fruit of some of the varieties seemed to us of excellent quality, the people have a rather low opinion of them as food. They are sometimes eaten, either raw or cooked; but do not compare in importance with breadfruit or taro.

The number of other plants used for food is considerable, but none of them, nor even all taken together, make up an important part of the diet. Arrowroot (mogmog; Tacca leontopetaloides) grows wild under the breadfruit trees. The people know how to make starch (mwisi) out of the roots but rarely take the trouble to do so. We never saw the process or any of the product. Sugar-cane (wou; Saccharum officinarum) is planted on or near house platforms. Children, and more rarely adults, enjoy chewing a piece of the stalk. But one or two clumps are enough for a household.

A plant said to become important in case of famine following a hurricane is gop (Portulaca samoensis). The tiny succulent leaves are washed in sea water, then boiled in fresh water, then crushed with the coral pounder and mixed with coconut cream.

Several plants of European introduction are grown to some extent: squash (a summer squash or marrow), papaia, pineapple. The squash and papaya plants are common, but bear very little, and that of miserable quality. Pineapples are very scarce. I can not recall seeing a plant on the island, but we were offered one fruit, quite a good one.

Fruits of several native trees are eaten, but not especially prized. Those named to me were avūs (Crataeva speciosa) and song (Bruguiera conjugata). The nuts of kazās

1: Burrows--41
116, 262

(1947-48)

Woleaians
Ifalik

"Pandanus fruit is not eaten on Ifalik."

1: Burrows--83C (1947-48) Woleaians
116, 225, 262, 565 Ifalik

"The most prized of all meat is that of the sea turtle. The people say they are commoner on some of the other islands, notably Lamotrek and Elato, then they are on Ifalik. On some uninhabited islands they are said to abound. During the six months we were there, four of them were taken, to our knowledge; three of these within two or three days, so that they were all cut up and cooked at the same time. Turtle meat is reserved for the clan Kovalū, in which the highest chiefly title is hereditary. Others get it only when this chief deigns to distribute it to them. Except for members of this clan, and the other chiefs, a meal of turtle meat is a rare delight."

1: Burrows--83K (1947-48) Woleaians
116, 226, 262 Ifalik

"Not only are flying-fish prized as food; they are also used as bait to catch larger species. Large hooks are attached to stout lines, baited with flying-fish, weighted with coral sinkers, and lowered to considerable depths in the open sea near the seaward side of the reef. The species caught are tangĕri, yellow-fin tuna; ngal, wahoo or (Hawaiian) ono; and aule, 'a big, fat one', probably albacore. This kind of fishing supplements the netting of flying-fish by torchlight, and so forms part of the institutional turu."

1: Burrows--83S (1947-48) Woleaians
262 Ifalik

"....the people of Ifalik are not well supplied with fish. The lagoon, not quite a square mile in extent, is not big enough to furnish an adequate supply. The reef, too, is limited in extent. Moreover, it is inaccessible because of high surf except in calm weather. The open sea has few fish. Shallow reefs in the vicinity of Ifalik are the best fishing grounds; but they are accessible, in native canoes, only when the wind is in the right direction, and not too strong."

1: Burrows--204-205 (1947-48) Woleaians
116, 152, 262 Ifalik

"The object of the ritual which only Maroligar can perform is to ensure abundant food. Divination is more often to learn the outcome of sickness, or what evil spirit inflicted it--so that he can be exorcised-- than for anything else.

The high value of food is emphasized in the chiefs' talks to the people. A related value, industry, is prized mainly as a means to abundance of food; 'If you do not work, there will be no food.' The people are exhorted not to steal, --especially not to steal food. They are urged to share--share food especially--with those who lack it, and with the sick.

There is a positive side to the value placed on food. The custom of concluding every communal task, and every ceremony in which all the people take part, with a feast, is evidence of that. The offering to [205] the gods at the beginning of such feasts may be a precaution, but may well have a more positive tone, that of inviting the gods, in token of good will and thankfulness, to share the people's bounty. Tom was fond of saying that Ifalik has plenty of food. So it has, as far as coconuts and pulax go; but the supply of breadfruit depends upon the season, and that of fish is rather scanty."

1: Burrows--205 (1947-48) Woleaians
116, 262, 152, 751 Ifalik

"Food and sickness are discussed as parts of the same sentiment, not so much because of the close connection in our minds between nutrition and health, but because the people themselves make such a connection, if not in the same way as we do. Feeding is a favorite treatment in case of sickness. The text of a song of lament says:

He was suddenly taken sick.
I am afraid he is hungry.

A common theme in laments for dead children can be phrased like this: 'Why did he die? I gave him the best of food, so that he would grow big and strong.'

A commonplace in the interpretation of folklore is that it may reflect past rather than present conditions. For example, the setting of our fairy tales is the life of European peasants in the Middle Ages or earlier. It may be that the emphasis on food just brought out reflects an anxiety that was stronger in the past, when the population was larger, than it is now. But there is no indication that the anxiety over sickness has diminished. On the contrary, since greater contact with foreigners has brought new diseases, it seems likely that this anxiety is stronger now than ever. The bright side of the picture is the prospect that the people of Ifalik and the islands round about will increasingly get the benefit of American medical skill. That may well brighten the tone, and relieve some of the tension, of this strongest of their sentiments."

2: Damm et al. --33 (1909) 1938 Woleaians
116, 262 Ifaluk

The ocean provides the natives with meat dishes; in the list of fish, that we have already given, only the shark is not eaten; this is because it eats men (lŏdj), because it is poisonous, fai, sauufan, maudjila, "because that is the custom."

The plant world supplies the natives with different varieties of taro, kodomŏlu, djaiwŏl, gŏb, waiwai, gawudj, gili, mŏgumog, gale, lale, faliob, jalomă, sugar-cane, and pumpkins, in addition to the fruits of the coconut palms, bread-fruit trees, pandanus and bananas. The fruits of the coconut palm are distinguished according to their condition:

lŭ mesŏ - nut with a very hard shell, and meat that is still soft, and easy to remove; the broken surface of the shell is black.

sau - lŭ mesŏ with a broken white husk, accordingly a very young nut.

šŏu - lŭ mesŏ with meat, which is already hard.

ŭb - lŭ mesŏ without meat.

The green husk of the nut is called bajenne lŭ; the brown husk is bajenne šŏu.

When they crack the nuts, the natives say: silŏu; on Faraulip: selŏu; on Yap and Sorol: serŭ.

2; Damm et al. --33 [2] (1909) 1938 Woleaians
116, 272, 262 Ifaluk

Palm wine (kári) is an important food. It is produced in the same way as on Polowat. And the natives prepare it in the morning, at noon and late in the afternoon. Cooked palm wine (lís) is mixed with water before it is drunk.

2: Damm et al. --163 (1909) 1938 Woleaians
262 Faraulep

The fruit of the breadfruit provides the natives favorite dish, mára, which is prepared in the same way as the mār of the Polowat islanders.

2: Damm et al. --168 [3] (1909) 1938 Woleaians
116, 262, 562 Faraulep

Certain food restrictions apply to the women, and they are never allowed to touch the following kinds of fish: bŭp, liwelŭ, faî, bă̆xo, nawŭt, mŏ̆ru, nŏ̆s, uă̆t.

3: Thilenius and Hellwig--253-254 (1909-10) 1927 Woleaians
116, 262, 241 Woleai

On that point where, during the last typhoon (1907), the sea had flooded over the south coast, a pond was formed, 300 meters long; framed with woods, it offers now an idyllic sight. The surrounding swamp-taro plantations thrive quite well, just as on several humid places in the proximity of the houses. Two more taro varieties and sweet potato fields in the dry ground along the pathway and in the neighborhood of houses yield an ample supply. On the other hand, there are only a few papaw trees, and, at present, there is not a single fruit-bearing breadfruit tree on the whole island....[254] Coconuts, the chief article of food, are still in abundance for the small population. On each farmstead supplies of drinking and eating nuts can be seen. As it is customary on most of the Caroline Islands, the sap of the palmtrees is collected one to three times a day for the preparation of the favorite fermented drink. Many fruit trees have escaped the devastation... Three lizard varieties were so frequent that, standing still in the bush, one could sometimes find oneself surrounded by up to 10 lizards. Sometimes a plentitude of heavily populated formicaries could become a bother. In a saltwater hole (diameter: 1 1/2 m., depth: 1/3 meter) on the farmstead Mauxean, Hellwig was shown a fish of dark-green-bluish, almost black color; it was about 30-40 cm. long; its caudal fin was placed horizontally, and it also worked in this direction. Two years ago, the typhoon had thrown this fish into this waterhole, and since then, it was said, nobody had fed the animal. Never before had the natives seen such a fish, and we felt justified in assuming that it belonged to regions which are beyond the reach of fishermen...

4: Krämer--186 (1909) 1937 Woleaians
116, 262 Woleai

A few chickens are available [VMM: on the Woleai Islands]; fish is abundant. Breadfruit, taro, bananas, etc., grow on the islands.

4: Krämer--230 (1909) 1937 Woleaians
116, 262 Woleai

The most important food stuffs:

lu, the coconut (Born: nu; djan nelu coconut water; djal, water; bŏr bottle). To pick the coconuts, a seating stick or climbing stick is used, of the type shown in Figure 96 [VMM: see source]. Kotzebue: coconut, ni, taking off the husk, pajŏl.

uót, best species of taro (Kotzebue: eoth)

pulag, high growing taro (Kotzebue: wulach)

fillë, high growing taro (Kotzebue: villa)

uidj, bananas (Kotzebue: ut)

mei, breadfruit (Kotzebue: më)

e mamis, a sort of cucumber

uóu, sugar-cane

faliap, Eubenia malaccensis, favorite of children

gadji, palm juice (Born: gatschi mem, sour: faloba); the product is not good until 14 days after it has been cut.

Born: papaya, gatoruk; Crataeva, jabatsch. Kittlitz says that Tacca pinnatifida occurs in large quantities on the island of Raur (Kotzebue: mogemug).

4: Krämer--232 (1909) 1937 Woleaians
116, 262 Woleai

Animal food. Mainly fish, ig (Born: ik).

Unlike the inhabitants of Lugunor and Anoun, however, they did not bring us any fish or other foods. On the contrary, they asked us for something to eat, and they devoured what we gave them. It was evident that there was a real famine on these islands, and apparently this situation occurs at least once during the year. According to the information, which Dr. Mertens obtained from W. Floyd, this hunger period comes in the fall; but here there was no doubt but that it is in March for we found the same thing on all the coral islands, which we visited during the latter part of this month. It is possible that there are several seasons during the year, when there is more or less hunger, depending on the circumstances; the greatest shortage is in the supply of fish, and they constitute the [p. 149] major part of the diet of the islanders. It may be too that W. Floyd was mistaken when he said that this famine lasts over two months. Unless it varies on the different islands, which seems highly improbable considering the fact that they are so similar, at the utmost it can last during the month of March; and this is assuming that what we saw was the regular yearly starvation period. For all during February we had seen an abundance of fish everywhere, and soon after the beginning of April we found quantities of them again on the Uleai group. If there is a short famine in March and a longer one in October and November, then W. Floyd is mistaken for he said that there is only one period in the year and that during that time there is a scarcity of edible fruits as well as of fish. The islanders have to fall back on their supplies of prepared breadfruit, and it seems that they get more of this from the high islands, than they can raise

themselves. During our stay the preservation of fish was utterly unknown on any of the islands.

5: Kittlitz--151 (1827-8) 1858 Woleaians
116, 262 Faraulep

This little island group was just as short of food as the others [MR: in March].

6: Senfft--55
116, 251, 262

(no date) 1905

Woleaians
Woleai
Lamotrek

The flesh diet of the natives consists of pork, chicken, fish, crabs, and sometimes turtles. The chief foods are coconuts and sweet toddy, the juice used for sour toddy before it is fermented; this seems to be a wholesome food because of its high sugar content. Few people eat eggs, and it is said that formerly no one ate them. Breadfruit is also an important food. The natives make breadfruit jam by kneading the fruit and then burying it in grooves which they seal hermetically with stones and leaves. They consume these during the time when the trees do not bear fruit. They also eat bananas, taro, Cystosperma, and sugar cane.

9: Senfft--14 (1903) 1904 Woleaians
116, 245, 262 Woleai

The cultivation is the same as on Lamutrik, partly more abundant, but here, too, yams and bamboo are lacking. Fowl, pigs and fish are numerous. The islands are planted to the highest density with coconut palms in luscious green. I noticed the disease caused by the presence of the scale insect on only two young palm trees each on the islands of Mariom and Taganlap, but here, too, the greatest damage to the palm trees was wrought by rats.

The diet of the natives is chiefly vegetarian. Coconuts, nu, are a staple food; during the long periods of cold at the time of the northeast monsoon when the winds are too strong for fishing expeditions, coconuts are often the only available food for two weeks or more. Next to the coconut in importance is Lack, here called bulak, which is not as abundant on these islands as on Jap. Only women may dig the hard, small root of this plant; they must do this before sunrise, and they must abstain from sexual intercourse and from smoking the night before. All the Lack fields of all the islands together (Tagaulap is the only island which does not have a Lack field)are not enough to yield a supply of this food for the entire population.

There are also bananas, wuitsch, pandanus fruits, wele-fatsch, papayas, gatoruk, and jabatsch (abiutsch on Jap) fruits, which have a very unpleasant odor: these are not consumed as much as the foods mentioned above as they are not found in such abundance. There is, however, a reddish fruit, somewhat like an apple, called arefas on Jap and faliap on Oleai; the season for this is December and January, and it is a favorite food, especially among children. These are stacked up on wooden poles by the dozen. They are said to cause digestive disturbances in older people, but they are believed to be very healthy for young people. I myself found that one of these fruits may cause a slight feeling of nausea when eaten on an empty stomach, but that after a meal a dozen may be consumed without any harmful effects. Judging from their taste, I should say that they have a high content of tannic acid. It should also be remembered that arefas plays an important part in Jap medicine.

In the consumption of animals, fish (ik here, nik on Jap) are, of course, one of the chief foods. If a large number is caught on a fishing expedition, there is a great rejoicing among all the natives and they hold large banquets. They dry those fish which they cannot eat. On calm nights, fires may be seen all along the beach; the fishermen and their families roast their fish and eat them immediately, whether they are hungry or not.

There are very few pigs, silo, and chicken, maluch, today; the former especially

are very scarce. Formerly they existed in [184] abundance. One reason for this is that more boats visited the island formerly and payed high prices for pigs and chicken, another that the pigs caused great damage to the Lack plantations and the marr grooves, and, finally, that a large number of chickens were consumed by patients during the epidemics. Today there are probably less than a dozen pigs in the entire atoll. Pork is sometimes cooked in large pots, as is customary on Jap, but more often large pieces are roasted over a fire.

Several varieties of clams and turtles, uong, are also popular.

(1903) 1904

Woleaians
Woleai

There is one kind of fish, the bright red bolé, which the natives of Oleai never eat; it is taboo for them. The people of Jap eat this kind, although they do not consider it a delicacy.

12: Lutke--127-128 (1828) 1835 Woleaians
116, 262 Lamotrek

Above all and before [128] anything else they asked for food: they all cried comi, comi (the Spanish come), and kept pointing to their empty stomachs. They ate everything that we gave them not only with gusto but with almost ravenous eagerness, and they even devoured our worm-eaten biscuit. It was evident that they had not had enough for a long time.

12: Lutke--134 (1828) 1835 Woleaians
116, 262, 437 Ifalik

They all wanted something to eat; they all offered shell-fish, materials and even canoes for sale and they knew how to drive a keen bargain.

14: Born et al--576
116, 241, 262, 731

(1907) 1907

Woleaians
Ifalik

According to my [MR: Fritz's] unfortunately extensive experience of typhoons, only a small number of the palms will recover [MR: following typhoon of March 1907], and will not bear fruit again for two or three years. On high islands (Saipan, Ponape, Jap) the natives are not so exclusively dependent on the coconut palm for food; large stretches are planted with tuberous plants and maize; in protected places breadfruit survives the storm, usually animal nourishment is available (Saipan). But on the low coral islands the life of the inhabitants depends almost entirely on the coconut palm, the breadfruit trees break down in the storm, the taro plants are washed away. For the next few months the fallen ripe and unripe nuts, the marrow of the fallen trees, can be used, but then threatens a state of emergency.

28: Spiro--4 [2]
116, 177, 262

(1947-48) 1949

Woleaians
Ifalik

"Food supply has also been effected by contact. Chickens and pigs, both in the smallest of quantities, have been introduced into the islands, as well as dogs. The latter are eaten under certain conditions. But more important than what has been introduced are those food products that the natives have tasted, and which have not been introduced, such as rice, milk, and beef, or 'carabou', as the natives call it. These, they tasted while on the larger islands, or when brought in occasionally by the Japanese, and they are very eager to obtain them again. The mothers, particularly, would like canned milk for their babies. One old man said that if he went to American he would do nothing but eat 'carabou'."

28: Spiro--8
116, 231, 262

(1947-48) 1949

Woleaians
Ifalik

"At present there are only two dogs on Ifaluk, though there were five when we first arrived. The high mortality is a result of a succession of deliberate killings. Children would tease the dogs incessantly, pulling their tails, hitting them, etc.; nor were the adults innocent of such behavior. After exhibiting remarkable patience two of the dogs attacked their tormentors, and were consequently killed. One dog attacked me, for no apparent reason, and the chiefs immediately ordered him killed. In all three cases some of the natives cooked and ate the corpses. Since the two remaining dogs are of opposite sex, it is improbable that the canine population will become extinct."

28: Spiro--8 [2] (1947-48) 1949 Woleaians
116, 262, 252 Ifalik

"The largest single source of protein food, quite obviously is fish, though the supply is not as abundant as one would expect. Fish are prepared by either men or women, and are invariably cooked by taking them, uncleaned over burning embers. There are no taboos on non-noxious fish, with the exception of sharks, and grown octopus. (10) There is, however, a discriminatory taboo on turtle flesh. Only the males of the lineage of Uluas, from whose line descend the paramount chiefs, are permitted to eat of the flesh. Visiting anthropologists, of course, are exempt from this taboo."

"10. Here again, a note on 'primitive logic' might be injected. One afternoon, Taroman, one of the chiefs, brought us a baby octopus, which he had caught in the lagoon, offering it to us as a rare delicacy. We decided to prepare it for dinner, but in the interim Dr. Burrows told Tom, our interpreter, that Taroman had given us a tayo, the native name for octopus. Tom replied angrily that we should not eat it, and said he would reprimand Taroman for offering us food, that the natives considered unfit. We followed his advice and discarded it. But that evening Tom came to visit us, and ribbed us good-naturedly for our ignorance. Taroman had not given us a tayo, he had given us an xyz, the latter being a rare delicacy. The point of this being that an adult octopus is considered a different species from a baby, so that tayo is one thing, but xyz is something entirely different."

28: Spiro--8 [3]
116, 241, 262, 271

(1947-48) 1949

Woleaians
Ifalik

"All other foods are starch in content--coconuts, taro, breadfruit, and bananas. Mention should be made of sugar cane, papaya, pineapple, and lime, all of which were introduced since contact, but which are so scarce as to be non-existent for all practical purposes.

The coconut tree yields three different kinds of food. The ripe coconut is eaten as is, or is grated and mixed into the various puddings that the women prepare. But the green coconut is much more important than the ripe, for it constitutes almost the entire liquid supply of the island. Coral atolls, obviously, have no natural water supply, and the rain water that is stored in pits or in tin garbage cans is usually unfit to drink, with the result that the green coconut water provides the one substitute for drinking water on the atoll."

28: Spiro--8-9 (1947-48) 1949 Woleaians
116, 262, 273 Ifalik

"The coconut tree is also the source of what is one of the most important foods, from the native point of view, gari. Gari is the sweet sap-like liquid [9] that is obtained by tapping the coconut frond, and permitting it to run into a container, the natives using an empty coconut shell for the purpose. The men collect their gari twice a day, morning and afternoon, in rain or shine. Indeed the collection of the gari is the first activity performed in the morning by the men, and its collection in the afternoon signals the end of the economic day. It is consumed in three forms: when freshly collected, it is a pleasant soft-drink, and is drunk copiously by all the natives, and is fed even to the babies. If allowed to ferment, it has a beer-like taste, and is drunk, at least to my observation, only by the adult men. It is called lis. This fermented form has a definite 'kick', and though I have seen men become quite 'high' by overindulgence, I have never seen a man become intoxicated. Finally, the fresh liquid is used by the women in the preparation of the various puddings they make."

28: Spiro--9 (1947-48) 1949 Woleaians
116, 241, 251, 262 Ifalik

"The natives distinguish at least three major species of taro, and they are prepared in a number of ways. Taro plants grow the entire year, so that it is an ubiquitous food.

Breadfruit seems to be the favorite starch food, perhaps because it is not as abundant as the others, since it grows only during the prevailing westerlies, but it is absent during the Trade Wind season. It, too, is prepared in a number of ways. Breadfruit is preserved, by salting cooked breadfruit with water, patting it into balls, each wrapped in a separate leaf, and stored in underground pits. It is eaten during the off-season. I could not get myself to eat any because of the---to me--- extremely offensive odor it emits.

Bananas, though abundant, are not a favorite food, and are fed to the hogs and to visiting anthropologists, though the natives do eat them."

28: Spiro--39 [2]
116, 226, 476, 262

(1947-48) 1949

Woleaians
Ifalik

"Except for the rare gathering of crabs by the women, and the even rarer slaughtering of a hog or killing of a chicken by the men, fish is the only source of meat, and it is highly prized. Fishing is done both individually and communally. Private fishing is of minor importance, as compared to the communal fishing. It consists of reef fishing with rod and line, and canoe fishing inside the lagoon and on top of the reef with line and bait, either live or lure. The natives make hooks of mother-of-pearl, and also use those introduced by the Japanese and by us. The term, individual fishing, must be qualified. It does not mean that an individual fishes privately, for this is very rare. Individual fishing is almost always practiced by a number of persons whether it be three or four boys casting into the surf, or nine or ten canoes, each trowing inside the lagoon or on top of the reef in a moonlit night."

28: Spiro--51 [2] (1947-48) 1949 Woleaians
116, 776, 262, 252 Ifalik

"Wot is a species of taro, much rarer than the other two kinds of Ifaluk, and is prised very highly. Its value is apparently recognized by the alus as well, since it is the only other food eaten by them. When a person on earth is ill, wot is prepared for him, at the behest of the alus (that is, at the behest of Arogeligar), because of its presumed medicinal value. (12)"

"12. Wot is prepared differently from other kinds of taro. It is prepared differently from other kinds of taro. It is placed directly on the fire, and is removed after much charcoal formed. It is then ground fine, grated coconut meat is ground in with it, after which ground leaves of the warung and angorik plants are mixed in."

28: Spiro--89 [2] (1947-48) 1949 Woleaians
116, 853, 862, 262 Ifalik

"In its third month, the infant's diet is increased, and in a sense, this is the beginning of its weaning, though the natives do not view it as such. The mother begins to give the infant taro and fish, which she first masticates and then introduces it into the infant's mouth with her fingers. At this time, also, the infant is introduced to the palm-toddy. Only the fresh toddy that had just been collected is given to the infant, and even it is first diluted with water before it is given to the baby. If the infant does not like the solid food, it is not forced to take it, but its mother will continue to offer it these foods at frequent intervals, until it gets to like them."

40: Robertson--50
116, 164, 262

(1875-76) 1877

Woleaians
Woleai

"At the time of the Rupak's visit to Oulleai, the [MR: influenza] epidemic above alluded to was raging. This, together with the scarcity of food, was making great havoc among the people, and Williams, the Englishman, stated that he did not expect more than half the natives would survive."

40: Robertson--50
116, 142, 291, 262

(1875-76) 1877

Woleaians
Woleai

"They are a fine, well made race, good featured, light in colour, and are most harmless and inoffensive. This group has at one time been thickly inhabited and there are remains of piers and breakwaters similar to those found in the Pellows. The dress of the natives consists of a species of fine mat which they weave from the fibre of the pandanus. This group produces nothing but cocoanuts, which with fish is the sole food of the natives."

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

133 sand. Out from the beach there was a hundred yards or so of coral platform, largely exposed at low tide, then finally the edge of the reef itself against which the great rollers of the Pacific broke their force all the year around.

133 361 The other inhabited island, Falalap, was rather different: a large, rounded blob sticking out into the sea and spoiling the neat circle of the atoll. The habitations were all on the northwest end of the island, across the narrow pass from Falarik. Here, too, there was a maintained park-like area, corresponding to the lagoon-side coconut grove of Falarik: but on Falalap, coconuts and large breadfruit trees were interspersed, giving a different "feel" to the landscape.

133 137 ●262 The center of Falalap was largely a great swampy area carefully cultivated by the women of both islands. Two kinds of aroids (taro), *Colocasia* and *Cyrtosperma*, were grown there for their edible, starchy roots which, with breadfruit, formed the staple food of the atoll. We did not get around to exploring this region in any detail until late in the summer.

123 226 The mapping operation was kept up fairly steadily for several days, but there were always intermissions. On Friday afternoon—the second day of the mapping—Bakal and Yani had no difficulty in persuading us to knock off mapping and go spear fishing. We all piled into Bronson's skiff and rowed over to the shore of Ella, outside the pass into the lagoon. Don was rather snooty about this skiff, remarking that a Western rowboat looked like a garbage scow beside the trim and speedy Ifalukian canoes. But Yani and Bakal liked it—perhaps partly because it was foreign, but also because it was steady and because it [136] could hold several people easily. Don, maintaining his scorn, called it the BWUP after one of the more ungainly species of trigger-fish.

227 Yani and Bakal each had steel-pointed wooden spears, about fifteen feet long; and short, slender steel spears. The long spears were for poking; the short spears were shot from a sling. The sling looked like a strip of inner-tube; at one end was a string loop, tied on firmly; at the other end the rubber was tied into a loop just large enough to slip over the thumb. With the rubber loop over the right thumb, the string loop was pressed over a slight notch in the butt of the spear, and the spear then simply pulled back with the left hand and let go. It worked like a Hawaiian sling spear, with the hand replacing the hollow bamboo grip.

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR2]
Ifaluk

Hawaiian sling spear, with the hand replacing the hollow bamboo grip.

Fish were not too plentiful and all were small. In a short time Bakal got four small surgeon fish of two species and a small bright-colored reef fish. None were over five inches long—which showed that small fish were not scorned as food.

Don had taken his Arbalete spear gun—a complicated and lethal weapon that had as yet hardly been tried. Yani borrowed it, and Don was greatly cheered to see him miss a couple of shots—Don had been feeling sheepish about his own misses. Presently there were loud shouts from Bakal and Yani. Yani, for fun, had shot a big moray eel with the Arbalete gun. (For fun because the Ifalukians do not eat moray eels. Ted explained this as a sort of pact: the Ifalukians did not eat morays or sharks, with the idea that the morays and sharks would reciprocate. The pact was occasionally violated by both the morays and the sharks.)

The spear was deep in the neck of the big eel, but the eel was still lively enough so that we did not dare try to bring it into the boat, and it was impossible to get it off the spear. So we rowed all the way home towing the speared moray behind the boat. After dragging the eel up on the beach, we managed to get the spear out. Don, Bakal and Yani then started out again, swimming, to try for more fish among the coral heads of the lagoon in front of the Fan Nap.

Don got a fine chance at a blue crevelley about a foot long, and hit him right through the middle. Just then, Yani swam up and pointed to a big moray eel completely out of the rocks and swimming rather feebly along the sandy bottom twelve feet below. The eel was partly on its side and seemed to be looking up at them. The thought flashed through Don's mind that some fool had thrown the speared moray back into the lagoon, and there it was, out for revenge.

They had just started to get themselves out of there when a big shark shot by—a huge, grey torpedo. It made a swift circle around Don, Yani and the eel. Yani shouted and thrashed the water with his hands and feet, at the same time making for the nearest coral head, yelling for Don to come. Don was close behind, still with the speared fish. They clambered onto the platform of coral, where they were standing in water about halfway up their thighs, Don holding

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

123 the fish and spear high out of the water, trying to avoid attracting
226 the shark with blood. Once more the shark swept by, this time with a second shark just behind. Bakal swam out to the reef, in response to Yani's yells, carrying one of the big, long spears, while Toroman rowed out with the BWUP to pick them all up.

Yani had fished around the coral heads of the lagoon all of his life, and said he had never before seen sharks come in so close to shore. He had a theory that the noise of the spear gun had attracted them. It seemed more likely to Don that they had followed the nice trail of blood from the speared moray, dragged all of the way across the lagoon from outside the pass (where sharks were common) to the area off the Fan Nap. The speared moray was still lying on the coral sand, so the one they had seen behaving so queerly in the lagoon was another.

● [260] The day ended with a fine fish dinner.

Ted turned on the radio that evening to listen to some music and
123 presently accumulated an audience of several Ifalukians who had happened to drift by. The next evening people started accumulating on the temple grass behind the Fan Nap shortly after dinner, and it soon became apparent that they wanted another radio concert. The news, apparently, had spread that this was possible. We were a little appalled at the prospect of having to give a radio concert every evening, none of us being much addicted to radios. We explained that the battery would get tired if it were worked too hard. Then Don happened to think of the phonograph.

The expedition had been equipped with a portable, wind-up phonograph. No one knew whose idea this was—perhaps a hang-over from some previous atoll expedition with a juke-box addict among its members. The accompanying records mostly looked like juke-box material, though of uncertain vintage, along with a few records of Hawaiian music.

We pulled down the box of records, which had been stored away high on a beam in the Fan Nap, and set up the phonograph on the temple grass lawn back of the camp. Tony, eagerly helping, said he knew all about phonographs—that experience with the Coast Guard Station on Ulithi again—so we turned the machine and records over

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

862 364 527 The people had brought many pots of breadfruit, cooked in different ways, and there was a large pile of drinking coconuts—also divided by Toroman. The meal lasted about an hour. I spent most of the time prowling around with the cameras while Ted and Don were more directly participating, squatting with the chiefly group. Ted reported that he liked best breadfruit that had been cooked with coconut [250] cream, resulting in a sort of mashed dough with the white, creamy, semi-sweet sauce.

123 648 That evening Don had his regular session of English and Ifaluk language exchange under the gasoline lanterns in the back of the Fan Nap. After the lesson Yani and his friend Tachiwelimeng lingered. They asked about the war between the United States and Japan, and got to telling about their own experiences. Tachiwelimeng had been taken by the Japanese to Fais, where there was a radio station. When the first American ship appeared off the island the Japanese got very excited, radioed the news to Yap, and then disappeared into hiding. The bombardment that followed scared everybody on the island. Tachiwelimeng spoke no English, but he was a born clown and gave a hilariously vivid pantomime of how the noise of the first shell tumbled him, how he crept behind a coconut palm and crouched in a ball, how a shell hit the coconut tree about six feet overhead and blew it down. No one was hurt except one of the Japanese, who was hit in the arm, but not seriously.

648 Japanese ships later took their captive labor to Yap, to use in filling holes in the landing strip made by the regular American bombings. Tachiwelimeng gave another graphic pantomime of American planes dodging Japanese ack-ack, bombs exploding all over the place and the like. These people seemed to look back on this as a big sideshow, bearing no resentment for the local people killed by the American bombings of Yap, and little resentment against the Japanese for getting them involved there.

126 The days were beginning to go by with remarkable speed. Ted gravely crossed them off, one by one, on a big calendar posted in the Fan Nap, and there was a check on this in my notebook, where the meteorological observations were entered every morning, first thing

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

pulled out and dumped, ready for distribution. This, as always, was the special function of Toroman. Five big red fish were put in a pile by themselves, for the chiefs, and there was another pile of special kinds of fish, mostly trigger-fish, set aside by custom for the old men. The remainder of the catch was sorted out roughly by size into piles of large, medium-sized and small fish. In the meanwhile, men representing each of the various households gathered around, smoking and chatting. All had freshly-woven coconut baskets for their share of the catch. These baskets, quickly made from the green palm frond, were the ordinary packaging material of the island.

In the first round, Toroman tossed to each man two of the larger and three of the middle-sized fish. Then each got ten to twenty fish from the middle-sized and small piles, the number depending on the size of the fish and the number of people in the household. Then every family got one more large fish.

Don and Yani weighed a few specimens of the different kinds and sizes of fish, and calculated that the total catch was about 630 pounds. About forty pounds of the smallest fish were thrown out as too small for use, or because they were of kinds considered inedible. The seine catch as distributed, amounted to about two pounds of fish per individual inhabitant.

Everyone had fish that evening, and very good it was. Several of the most prized kinds of fish were given to us. These were expertly fileted by Bakal, and equally expertly fried by Ted in bacon grease after being rolled in corn meal. Ted was a master at this. Jobs around the Fan Nap were generally pretty equally shared, but Don and I always tried to maneuver Ted into the fish frying job—not, for once, out of indolence, but because he really did have a touch. The Ifalukians generally roasted fresh fish like these whole over coals from small coconut-husk fires, and they were awfully good that way, too.

This kind of fishing, with giant rope-and-coconut-leaf tinsel dragged over the coral bottom of the outer reef, was called rop fishing. Whether Ifalukian rop had any connection with English rope was questionable. Ted thought the similarity coincidence, since the rop fishing must have been an ancient practice, long antedating any contact with English.

The Ifalukians, like the people of all of the old Micronesian and

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

123 but I was glad I tried because it gave me a direct experience with
585 Fagolier as dance director. He squatted by the fire and the line of
643 men formed opposite him against the dark backdrop of the coconut grove. To get some glimmering of what to do, I had to watch both Fagolier and the men in the line beside me, and I gradually got the feel of the situation. The dance involved a series of gestures with both hands, and of vocal sounds that varied from hums to shouts but that did not seem to form word patterns. Fagolier directed this with a remarkable economy of gesture, the indications of his hands being translated into full scale action by the men opposite. He was acting as leader and coordinator—again quietly, skillfully and economically.

121 These thoughts about Fagolier were precipitated the morning that Don started his food study of the Falepenach household. Don was resolved to be as exact about this as possible. It is very difficult to get precise figures on what people eat under any circumstances (think of the problem of measuring everything scraped off the plate into the garbage can, or of finding out whether Johnny got into the cookie jar this morning, and how many cookies he snitched). But, Don reasoned, the greater effort you made to be precise, the nearer you were likely to come to truth in your measurements. So, with the complete and invaluable assistance of Yani, he started out to measure everything eaten in Yani's household, Falepenach, for a month.

125 It developed at once that I was about as helpful as a sore thumb
● 262 in this process. That first morning Don and Yani weighed all of the breadfruit and all of the coconuts brought in for the day's use. Then, to get a measure of the difference between crude and finished product, they waited around while the breadfruit and coconut were being prepared for cooking. Clearly I wasn't needed for either the weighing or waiting processes, so I drifted off to sit down by Fagolier and contemplate the horizon. Don, in the meanwhile, found (among other things) that twenty husked, ripe coconuts, weighing 27 lbs. 5 oz. produced 11 lbs. 13 oz. of copra ready for use in that day's cooking operations in Falepenach.

121 We had been talking about the problems of the food study from the
262 beginning. A careful study of what people ate, how much, how they got it, how it served them nutritionally, was clearly basic to any at-

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

tempt at understanding man's relations with the world around him. With the census finished and the mapping well started, food study had next priority.

Each of us had somewhat different ideas about how to approach this difficult job. In the end, records were kept on four different households for a month each. Two of the studies were made by Ted and two by Don. I am not sure, looking back, why I stayed out of this, because food relations have long been one of my pet interests. I think it was chiefly a matter of economy of effort. Ted and Don had the matter well in hand and each had special advantages: Ted because of his familiarity with local customs and with the language, and Don because of his close association with the invaluable Yani. The daily record taking rapidly became routine, and a pattern formed very early by which each of us established his own special daily routines, thereby avoiding duplication of effort. When to collaborate and when to specialize is a nice problem in the team approach to scientific study. I think we handled the division of labor very well, though not always consciously.

Don and Ted have summarized the results of this food study. The details will be published in scientific papers, but perhaps I can give here a general summary.

The four households included a total of forty people, men, women and children: the average weight per person being 95 lbs. The average daily intake of staple food per person per day was: fresh breadfruit, 175 grams; ripe coconut meat, 130 grams; fish, 105 grams; taro, 70 grams; fermented breadfruit, 60 grams; fresh toddy (sap from coconut flower stalks), 415 cc.; milk from green coconuts, 75 cc.; green coconut meat, perhaps 35 grams.

Calculating food values for these materials is not easy, since most detailed nutritional studies have been made with northern foods. The foods of the tropical Pacific, however, have been studied in Hawaii, and there is a growing literature on nutrition in other parts of the Pacific. From this information, it appears that Ifaluk diet is inadequate in several respects, according to the usual dietary norms. The Ifalukians, however, gave every appearance of having an adequate diet—there were no obvious signs of their being undernourished. I have long

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

146 come to view with suspicion these tables giving comparative nutritional
114 values for different parts of the world. Truly, much of the world suffers from malnutrition as compared with the United States or Western Europe; but also, I think, our nutritionists have failed to give adequate attention to possibly varying needs. The food needs of man in Ifaluk and of man in New York are not necessarily the same.

121 One problem with diet studies is the difficulty of keeping track of
262 snacks, of occasional foods; yet such occasional or incidental food may be very important in relation to some vitamin or mineral requirement. We were very conscious of this problem, and Ted and Don made every effort to keep track of incidental food as well as of staples. Yani was particularly helpful in this, because he tried to remember and report all of the incidental things that he and his friends ate as they wandered about during the day. On this basis, there was considerable variety in the Ifalukian food. At least thirty kinds of plants were eaten in one way or another (not counting "medicines"). Don got records
267 of eighty-eight different kinds of fish that were eaten, and guesses that
136 there must be many more. For animals, there were also sea turtles, chickens and other birds, and occasionally pigs and dogs. Some seventeen kinds of molluscs were eaten, eight kinds of crustaceans, and a few other things like sea anemones and one kind of sea urchin.

137 We arrived at the height of the breadfruit season. Breadfruit trees grew everywhere, producing far more fruit than could be used; and
[136] the fallen, rotting fruits were probably the chief breeding places of the flies that so plagued us. As the breadfruit harvest dropped later in the summer, so did the numbers of flies.

137 Breadfruit in its season (June through September, with a second,
265 smaller crop in February and March) is the staple food, the chief source of starch, for the people of Ifaluk. It is a staple on most of the islands of the tropical Pacific—the "bread" of Polynesia and Micronesia.

137 The big, starchy fruits grow on a handsome tree, probably native to
245 Malaya. It may well be among the most anciently cultivated of plants and the main food varieties are seedless, completely dependent on man for reproduction. It is propagated from shoots which spring up around the base of the trunk, and the colonizers of the Pacific—

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

251 Breadfruit is the only food on Ifaluk that can be stored for any length of time (they sometimes smoke fish, but not to keep it for more than a few months). To preserve the breadfruit, the skin is scraped off and the pulp cut into sections which are put into big, open-meshed rope baskets. These are carried to the lagoon, weighed down with coral blocks, and left to soak overnight. The baskets are then removed from the lagoon, covered with leaves, and left for still another night. The pulp can then be kneaded into a paste, which is wrapped in leaves and buried in the ground. The preserving process is quite comparable with that used for sauerkraut, and the stuff lasts for years. We didn't like the taste of this mar, but apparently it is nutritious enough. Considerable quantities are buried every year, insuring a food [131] supply in case of a disaster like a typhoon.

● 262 There are seven or eight named varieties of breadfruit, distinguished 137 by the size and appearance of the fruit, shape of the leaves, and the like. In the case of two of the varieties, the fruits have seeds, and in these the roasted seeds are used for food. They have a chestnut-like flavor and quality.

Almost as important as breadfruit were the two taros. This is perhaps doing violence to the word "taro" since it is using it to cover two similar but quite distinct kinds of aroids with edible tubers, one called by the botanists *Colocasia* and the other *Cyrtosperma*. The taro of Polynesia is *Colocasia*, but on Ifaluk both plants were about equally important. These again are anciently cultivated plants, vegetatively propagated, each with endless named varieties. The *Colocasia* on Ifaluk was called wot and the *Cyrtosperma*, pulach (the "ch" is also rendered as an "x" sort of a sound—we argued endlessly about how to spell Ifalukian words).

Both wot and pulach are aroids, that is, they belong to the botanical family that includes the "elephant-ear" plants, the Calla lilies and the Jack-in-the-Pulpit of North America. A third edible aroid, *Alocasia*, called file by the Ifalukians, was grown on the atoll, but it was considered definitely inferior to the other two and little used as food.

244 Wot and pulach were grown in low, swampy ground in the interior of the islets. The central part of Falalap was almost all swamp, and the main gardens were located there. These taro swamps occur all through the Pacific and it is difficult to know now to what extent they

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

are "natural" and to what extent man-made, because they have been subject to careful cultivation for many generations. The care of the gardens is exclusively women's work and they become expert gardeners. The plants are set in neat rows in rectangular patches, each patch belonging to a particular household so that each household on the atoll has its share of the large Falalap gardens. Weeds grow luxuriously in the rich, mucky soil, and weeding is the main gardening chore. The weeds, I was interested to see, are always buried in the muck, so the practice of "green manuring" is an ancient one here. With young plants, coconut leaves were sometimes used as mulch, to cut down the growth of weeds.

I was greatly impressed, watching these women go about their work, at how little a Westerner would be able to tell them about gardening practices, at how well their methods were adapted to the plants and environment of their atoll. Perhaps one could put this another way, and wonder at how little modern "civilized" man with all his science has been able to improve on, or change, the gardening practices developed by peasant cultures through generations living close to the earth. We have made drastic changes in large-scale agriculture, but the gardener, throughout the world, shares a curiously large fund of common lore.

But I had intended to write here about food, not about agricultural methods. Wot and pulach were eaten to some extent, even during the breadfruit season, just as the preserved breadfruit (mar) was eaten to some extent at other times of the year, making some variation in the daily monotony of starch. There were many slightly different ways of cooking these tubers. We liked best a way of preparing wot (*Colocasia*) whereby it was mashed, cooked with coconut cream, moulded into little balls in a pot, and the whole covered with a thick paste of coconut meat. The effect was a little like that of mashed sweet potatoes served with heavy whipped cream.

Coconut, of course, permeated every aspect of Ifalukian cooking—the milk from green nuts and ripe nuts, the flesh from green nuts and ripe nuts, the sap from the cut flower stalks (here called hachi, perhaps best called "toddy" in English). The coconut was more often used as a supplement in cooking breadfruit or taro, as a seasoning, or the

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

milk or toddy as a liquid for cooking, than as a food in itself. But the green nuts everywhere provided a handy source of drink; and the translucent, jelly-like flesh of these green nuts, eaten after the milk has been drunk, was surely a highly nutritious, though perhaps minor, food.

When a coconut sprouts, the hollow of the nut becomes filled with the white spongy tissue of a special absorbing organ (an extension of the cotyledon). This spongy tissue has a pleasant, sweetish taste and the Ifalukians were very fond of it. It often seemed to me that the juice of green coconuts filled the role on Ifaluk of soft drinks or mid-morning coffee in our culture; and that the spongy tissue of these sprouted nuts corresponded to candy bars, a tasty snack always readily available. The Ifalukian product, in both cases, would seem to be more "healthful" than its Western counterpart.

Toddy, or hachi, the sap that oozed from the cut flower stalks of coconuts, was a very important element in the Ifalukian dietary. Many palms have a strong flow of sap into the large, rapidly-growing flower stalks, and people in several parts of the world have learned to use this—most notoriously in a fermented form. The flow of sap was better in some coconut palms than in others, and on Ifaluk the particularly good palms were marked off for this special purpose of supplying toddy. Every morning and every evening all of the young men of the island were off on their rounds of collection, each with his special beat.

The toddy palms all had notches cut in the trunks to facilitate climbing. A man would go to each of his palms in succession, climb up to the crown, pour the sap accumulated in a coconut shell into the bottle he carried, shear off a thin slice from the end of the cut flower stalk to stimulate sap flow, replace the coconut shell to catch the drip, and go on to the next palm. Several quarts of the fresh sap were thus brought into every household each morning and evening.

The rich, sweetish sap was reserved primarily for the women and children—its place in the diet of Ifaluk seemed to correspond to milk in the diet of the West, and the regularity of the young men with their toddy chores reminded me strongly of the regularity of the milking chore in the rural West. It was, in fact, the only regularity we were

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

able to observe on Ifaluk. Meal hours had no fixed time. There was generally only one large meal in a day, but the time of day at which this was eaten seemed to vary with the whim or convenience of each particular household. The time of toddy-collecting, however, was as unvarying as the sunrise and sunset with which it coincided; and every young man dropped whatever else he was doing at those times to carry out his chore.

Officially, the toddy was always used fresh on Ifaluk. As Ted had found during his first visit to the island, the chiefs had decreed prohibition. They had observed the effect of alcohol on the peoples of some of the neighboring and more Westernized atolls, where the people had easily learned how to distill the fermented toddy into really potent stuff, and they had decided that for the peace and security of the island it would be best if even fermentation were not allowed.

But toddy ferments easily and quickly. We noticed at some of the dance rehearsals an occasional older man with a definitely unsteady gait or a tendency to be too loud or too obvious, and concluded that he had allowed some toddy to follow its natural course by leaving it sit for a day. We had no direct evidence of the violation of prohibition, however, until toward the end of the summer when Tom offered us a sip from his bottle.

The stuff tasted very good to me, though perhaps I am no judge since my taste in alcohol is catholic. It had a pleasant, cider-like tang with, I should judge, about the strength of good beer.

Breadfruit, the two kinds of taro, and coconut, then, were the basic vegetables of the atoll. There were also a number of minor crops—especially papayas and several kinds of bananas and plantains. The papayas were fair, the bananas excellent, but they seemed to be little used by the people. We were often brought cooked green papayas, which have a squash-like texture and taste, and this seemed to be the way they were most commonly used. We were kept constantly supplied with bananas—we always had a bunch or two hanging to ripen in the Fan Nap—but the people seemed to consider them to be children's food. They appeared to prize the banana plants more for the fiber they got from the stem than for the fruit.

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41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

Fish formed the basic animal food, but the people also had pigs
262 and chickens. We included domestic animals in our census of the
231 island, and came out with a total of 260 people, five dogs, nineteen cats,
[161] thirty-three pigs and fifty chickens. The pig total included animals of all sizes, so pork was not a common article of diet. Only two pigs were slaughtered during the summer, not, as far as we could see, in celebra-
[052] tion of any special occasion. The pork was simply boiled instead of being roasted in the traditional Polynesian style.

The fifty chickens were regarded also as a source of occasional meat. We found no instance of the eggs being used for food by the local people. Soon after we set up camp, a young man came around with some eggs which he offered to trade with us for cigarettes. We made a deal and started looking forward to next morning's breakfast. We decided to boil the eggs. It turned out that I liked mine at the three minute stage, the others in a somewhat harder condition. So I dipped my eggs out of the pot at the proper time and started to break one open only to disclose, not the expected runny yolk, but a fully developed chick, ready to hatch! A hasty examination showed all of the eggs to be in the same stage.

I don't know whether this was purposeful or accidental. I wondered whether the people knew of the Phillipine delicacy, balut, and assumed that all outsiders like their eggs in a late stage of development. At any
[437] rate, we got the idea across that we would like fresh eggs, and through the summer we were brought a fairly steady supply, always in return for cigarettes. After that first experience, we always carefully candled the eggs, occasionally finding one that seemed to be more chicken than egg, but this apparently by accident.

262 Although the Ifalukians did not eat chicken eggs, they were very fond of turtle eggs, and these at times turned up in good supply. The albumin of a turtle egg (at least of the eggs of the sea turtles of Ifaluk) does not coagulate on cooking. Don had a strong aversion to uncoagulated egg albumin, and I remember watching his efforts to make a turtle egg in a frying pan turn into something that might look like a respectable egg—yolk surrounded by the conventional white stuff to which we are accustomed. But the turtle egg still looked raw, no matter how long he fried it.

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41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

I, of course, made the proper jeers about this culture-bound food aversion of his, which would cut him off from a rich local source of protein. Out of sheer bravado one morning I sucked turtle egg after turtle egg. I got nowhere in my effort to make Don feel foolish (he had great reserves of faith in his own prejudices) but I did make myself very sick. I suspect that the relation between the cramps and the turtle eggs was sheer coincidence; but for the rest of the summer I couldn't face a turtle egg with any more equanimity than Don could, and the eggs that were brought us were disposed of surreptitiously.

The Ifalukians were always bringing us food, more food than we could possibly have eaten with the best will in the world. We protested, but there was no stopping them. Much of it we didn't like—we were a very culture-bound trio, really, perfectly happy with our spam and canned spinach. We felt we couldn't run the risk of hurting the feelings of our hosts by admitting that we didn't much like their breadfruit and boiled pulax, so we would accept the food, eat what we could, and stealthily dispose of the rest in the lagoon at night.

We were always really grateful for gifts of fish, however, and my memories of the summer include the tastiest fish orgies of my whole life. We would turn the fish over to Bakal for fileting and Ted was really a master at rolling the filets in corn meal and frying them in bacon grease as I remarked before, and the Ifalukian fish, fresh out of the transparent waters of the lagoon, were just the right material with which to work.

But while we kept our respect for Ted and the Western method of frying things, we also fell in easily with the Ifalukian method of cooking fish. The commonest and perhaps the tastiest method was simply to roast the fish whole in coals of burned coconut husks. The hardened and carbonized skin could be easily peeled off, to reveal the tasty flesh. I have particularly fond memories of roasted parrot fish. Somewhere, from my Florida childhood, I had got the idea that parrot fish were inedible. I still don't know about the West Indian varieties, but I can certify that the parrot fish of Ifaluk were very edible indeed.

Don and I lost weight during the summer though hardly needing to. I had a gaunt and hungry look, twenty pounds below my normal weight, when I left after three months. I suspect this was our own fault, due to our careless habits of living off casually opened tins of

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

796 [126] story. This went on for nearly an hour, with the three of us too busy with cameras and recording machine to really appreciate what was going on. Then there was an intermission. Arueligar, the high priest, distributed the two cases of corned beef and the two cartons of cigarettes we had donated for the occasion. Dancers and onlookers refreshed themselves by drinking coconuts. Then the dance was resumed, this time by the women, who formed their line along the west margin of the clearing. Their dress was similar to that of the men, except that of course they wore lava-lavas, not loin-cloths, under their coconut-leaf skirts.

796 178 533 Ted was interested to discover that two of the dances performed by the women were new—a concrete demonstration that the traditional form of the ur dance does not necessarily impose traditional subjects. One of the new dances, turning on a poem composed by Letaweriur, Yani's wife, concerned the first coming of the Americans to the island. It was a very long chant, recounting in detail the appearance of the first ship, the delivery of an official document, the nature of America and the Americans, and the like. Ted's translation of the opening stanza is:

Now all our women rejoice;
Now the Americans have come.
This is pleasing to the chiefs.
[539] *They have given us a paper.*
This place is to rise;
This island is to be lifted up.
The chiefs say we are to dance.
We will dance, we will rejoice!
This very month, for this is a good year! Eil
The Japanese are gone.
We did not like their rough ways.
The gods have been good to us;
Now our crops are safe.
The Americans talk kindly. . . .

529 123 262 When the women's dance was over, the people scattered into small groups—made up by family, by household, or by friendship—for the feast. Perhaps "feast" is too strong a word, since there was nothing

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

unusual about the food except our corned beef. But always, after a communal activity of any kind, there was a communal meal. I drifted from group to group taking pictures and eating a snack of breadfruit with this friend, a hunk of taro with that, and letting them play the always-amusing game of peering at one another through the sights of my Graphic camera.

The day was shot as far as "work" for us was concerned. By the time we had got film and notes taken care of, we were ready for our afternoon swim in the lagoon in front of the Fan Nap.

From the beginning, we had formed a habit of going for a swim in the lagoon toward the end of the afternoon. Many people on Ifaluk bathed in the lagoon in late afternoon, so we were right in line with local custom. As an old Floridian, I really preferred swimming in the bright sun of mid-day and I tried to make our lagoon schedule as early in the afternoon as I could; but what with one thing or another, we often didn't get into the water until rather late.

We always wore goggles. I wonder now why anyone ever goes swimming without goggles. Man, under water, is blind without them. In many places, to be sure, there is little to see; but one can never be sure of this without trying. And in the lagoon at Ifaluk there were unending marvels to be looked at.

We were caught at first by the sheer pleasure of drifting around, exclaiming at the forms of the corals and of the colors of the fish. Then we got to thinking that if we were to spend an hour or so in the water every afternoon, we might as well be trying to make some systematic observations.

The fish, we noticed, paid very little attention to us. Apparently a large brown object of human shape plopped into their environment had no connotation of danger. The fish went on about their business as usual, indifferent to the observer. The contrast with the land, where birds and mammals clearly regard observing man as a potential enemy, was great. We didn't have to resort to field glasses or blinds—we could just float pleasantly on the surface and watch the fish. In coral seas, at least, fish watching seems to me to have it all over bird watching, though I doubt whether I would be so enthusiastic about fish watching in colder waters.